# Immunize Utah

Volume 3, Issue 2 | Utah Department of Health Immunization Program | Spring/Summer 2003

## Chickenpox Outbreak in Two Utah Elementary Schools: Vaccination Worked!

**Caroline E. Green, CHES, BSN**
**School Nurse Consultant**
**Utah Department of Health**

**Maryam B. Haddad, MSN, MPH**
**Epidemic Intelligence Service Officer**
**CDC / Utah Department of Health**

Chickenpox is usually a mild self-limited illness but can have serious consequences. Before the varicella (chickenpox) vaccine became available in the United States in 1995, chickenpox caused 11,000 hospitalizations and 100 deaths each year. The majority of these deaths were in healthy children and adults without immunocompromising conditions that might have predicted a poor outcome.

The varicella vaccine, called VARIVAX™ in the United States, is supposed to be 71%–100% effective in protecting against any chickenpox and 95%–100% effective against moderate or severe forms. (CDC defines moderate as >50 lesions and severe as >500 lesions or with complications.) So it is not unexpected that some individuals who have been vaccinated will occasionally develop a form of chickenpox—but the illness is expected to be mild (<50 lesions) and without fever or other complications.

### Inside this Issue




Whenever people with prior immunity–either from infection or via vaccination–are re-exposed to the varicella virus, they are thought to benefit from a "booster" antibody effect, even if they don't develop outward signs of illness. This may explain why in Japan, where the vaccine has been available since the 1970s, titers in vaccinated children were actually higher at 20 years post-vaccination than they were at 10 years post-vaccination.

The national Advisory Committee on Immunization Practices (ACIP), which is comprised of representatives including the American Academy of Pediatrics and the American Academy of Family Physicians, has recommended that states require children entering child care facilities and elementary schools receive the varicella vaccine or show evidence of varicella immunity. Starting the 2002/2003 school year, Utah requires that children without a reliable history of chickenpox receive the varicella vaccine prior to kindergarten entry.

In December 2002, two elementary schools in Utah reported that they were experiencing a high number of chickenpox cases. Several parents expressed alarm that the vaccine may not work. The school district asked the school nurses to work with the state and county health departments to study the outbreak and figure out whether vaccine failure was causing the outbreak.

*(Continued on page 2)*

*(Continued from page 1)*

***Chickenpox Outbreak in Two Utah Elementary Schools: Vaccination Worked!***

We sent a letter and a questionnaire home with every child (about 1500 total students) in the two schools. About 96% of parents returned the questionnaire detailing their children's recent and past chickenpox experiences. They also gave us permission to verify their child's vaccine records. In most cases, we were able to verify vaccinations from the school records, but in a few cases, we had to call health-care providers' offices for more information. (Thanks if you were one of the providers who helped us!) We then followed up by interviewing each parent whose child had chickenpox since starting the school year.

We learned that 83 school children had recently been sick with chickenpox. Most of those cases were in unvaccinated children. In fact, unvaccinated children, with no history of chickenpox illness, had a 27%–40% chance of getting sick during this outbreak. A few of these children who became ill had unfortunate complications, such as secondary bacterial infections resulting in scarring and a ruptured eardrum.

There were 26 "breakthrough" cases in children who had previously received the vaccine. Another 538 children who had been vaccinated never developed any illness. We initially thought the number of breakthrough cases was going to be higher, because many of the unvaccinated children's parents mistakenly believed their children had received the varicella vaccine. This misunderstanding occurred because parents of the older children knew their child was "up to date" on their vaccinations but didn't realize they did not received varicella vaccine and that varicella vaccination was a requirement only for kindergarten students. (Similarly, several parents assumed their children were vaccinated for hepatitis A.) We learned that it was important to look at vaccine records very carefully!

Thanks to the great response rate from parents, we were able to calculate the **vaccine effectiveness in each school as 87%**. That was how well the vaccine protected children from developing any form of chickenpox. **Vaccine effectiveness against moderate or severe illness was even better: 96%** overall.

The majority of cases occurred in the first and second grades. In the older grades, the majority of children had natural immunity from prior varicella illness. In the kindergarten, vaccine coverage was much higher (71% in one school and 90% in the other), and several kindergarten classes sailed through the outbreak without a single chickenpox case.

**When we asked parents why they had not vaccinated their children, the number one reason was that the child's health-care provider had not offered the varicella vaccine. Some parents did not even know a vaccine was available.** Some had learned about the vaccine when their younger children were vaccinated, but they did not realize that the vaccine is also effective for older children. In fact, the varicella vaccine is effective for anybody – children and adults – without a reliable history of infection. (Those 13 or older will need two doses.)

Primary infection with varicella can be particularly severe in older individuals, please remember to assess older children and adults for a history of chickenpox, and offer vaccination to those who are still susceptible.

Based on CDC recommendations, Utah's local health departments and the Utah Department of Health now encourages reporting of individual chickenpox cases (in both vaccinated and unvaccinated individuals); the next revision to the Communicable Disease Rule will incorporate this change. To report a case, please contact your local health department or call the statewide reporting number: 1-888-EPI-UTAH.

## Kudos To Providers!

The Utah Immunization Program is proud to recognize outstanding efforts in immunizing Utah's children. We are pleased to recognize the following providers for rates shown during recent immunization (Clinic Assessment Software Application (CASA)) assessments:

For achieving the goal of immunizing 90% of two-year-olds with 4 DTaP, 3 Polio, 1 MMR, 3 Hib, & 3 Hep. B:

St. Mark's Family Medicine
Parkway Pediatrics

Outstanding achievements in immunizations goes to:

U of U Student Health Center
City Creek Pediatrics
Dixie Pediatrics

# Pneumococcal Conjugate Vaccine Shortage Resolved

On April 30, 2003 the Centers of Disease Control and Prevention (CDC), and Wyeth Lederle Vaccines announced that the Pneumococcal Conjugate (PCV7) vaccine shortage has been resolved.

Based on the current and projected availability of vaccine the Advisory Committee on Immunization Practices (ACIP) is recommending a return to the full dosing schedule for PCV7. According to data from the CDC and Wyeth Lederle Vaccines, the average number of vaccine doses delivered over the past three months exceeded the estimated average national need and all backorders have been filled in both the public and private sectors.

A catch-up schedule is provided for children who are not completely vaccinated (Table). The highest priority for catch-up vaccination is to ensure that children <5 years of age at high risk for invasive pneumococcal disease because of medical conditions receive a complete series. Second priorities include vaccination of healthy children <24 months of age who have not received any doses of PCV7 vaccine and healthy children <12 months of age who have not yet received three doses.

## Mark Your Calendars !

5th National Conference on Immunization Coalitions
Phoenix-Scottsdale, AZ — May 28 –30

National Immunization Awareness Month — August

### CDC Satellite Broadcasts & Webcasts

Adult Immunization Update — June 26
For more information regarding this broadcast to go : http://www.phppo.cdc.gov/phtn/Adult-imm03

Continuing education credits are offered for each broadcast.
For more info. contact Becky Ward at (801) 538-9450.

Providers are encouraged to notify children in need of additional doses of PCV7 in order to make an appointment for vaccination.

If you have questions regarding an order placed with the Utah VFC Program, please call (801) 538-9450.

| Age at Examination (months) | Previous PCV7 Vaccination History | Recommended Regimen |
|---|---|---|
| 2-6 | • 0 doses<br>• 1 dose<br>• 2 doses | • 3 doses 2 months apart, 4th dose at 12—15 months<br>• 2 doses 2 months apart, 4th dose at 12-15 months<br>• 1 dose, 4th dose at 12-15 months |
| 7-11 | • 0 doses<br>• 1 or 2 doses | • 2 doses 2 months apart, 3rd dose at 12-15 months<br>• 1 dose at 7-11 months, with a 2nd dose at 12-15 months (≥ 2 months apart) |
| 12-23 | • 0 doses<br>• 1 dose before 12 months of age<br>• 1 dose at ≥ 12 months of age<br>• 2 doses before 12 months of age | • 2 doses ≥ 2 months apart<br>• 2 doses ≥ 2 months apart<br>• 1 dose ≥ 2 months after the most recent dose<br>• 1 dose ≥ 2 months after the most recent dose |
| 24-59 (Healthy children) | • Any incomplete schedule | • Consider 1 dose ≥ 2 months after the most recent dose |
| 24-59 (High risk) | • < 3 doses<br>• 3 doses | • 1 dose ≥ 2 months after the most recent dose and another dose ≥ 2 months later<br>• 1 dose ≥ 2 months after the most recent dose |

# Protect Your Vaccine Supply

**Jan M. Kilpack, RN, BSN**
**VFC Coordinator**
**Utah Immunization Program**

With the rising cost of vaccines it is important to take the necessary precautions to protect your vaccine supply. Every practice/clinic should develop a written routine and a written emergency vaccine handling plan, per the VFC Provider Agreement. The following is a guide for what your vaccine handling plans should contain.

**Routine Vaccine Handling/Storage Plan**

Develop and adhere to a written routine vaccine storage and security plan specifying:

- designated primary and secondary person responsible for routine vaccine storage and security;
- refrigerator/freezer temperatures will be monitored twice a day;
- vaccines are immediately unpacked and stored at recommended temperatures upon receipt of shipment;
- storage unit doors are routinely checked at the end of the day to ensure they are closed and, if possible, padlocked;
- maintenance and cleaning personnel will be advised not to unplug storage units; safety outlet covers are in place, and ***Do Not Unplug*** stickers are placed near the outlet and circuit breakers.

**Emergency Vaccine Handling/Storage Plan**

Develop and post an emergency vaccine storage plan to deal with a malfunction in refrigeration and/or freezer units or any other emergency/disaster that might compromise manufacturer recommended vaccine temperature. This plan should assure vaccines are stored properly as quickly as possible. It should specify:

- designated primary and secondary person responsible for emergency vaccine storage and security;
- personnel with 24-hour access to the building and refrigeration unit/s in which vaccine is stored;
- how designated personnel are notified in the event of a vaccine storage emergency;
- steps to follow for proper handling and storage of vaccines after the emergency has occurred;
- alternate storage units and facilities (e.g., a back-up refrigerator, the fire department, a nearby hospital, or another providers, etc.) and procedures that the designated personnel should follow to access those units and facilities.

All staff should be required to review the emergency plan. It should also be posted in a prominent location such as the door to your vaccine area or on the refrigerator. **All office staff including the janitor and the security guard should know the standard procedure to follow and where/how the individual vaccines are to be stored.**

In the event of equipment breakdown or power outage, every attempt should be made to move the vaccine supply to another refrigeration unit as soon as possible. Any vaccine that has been allowed to warm above the recommended temperatures should be placed back in refrigeration, but clearly separated from the undamaged supply. The vaccine should not be used until the Utah VFC Program or vaccine manufacturer has been contacted for instructions on how to proceed. Depending on manufacturer specifications, the vaccine may still be viable.

**Each provider is individually responsible for contacting manufacturers to discuss whether their vaccines may have been compromised.**

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**Special Note: Utah VFC Program staff will ask for a copy of the office vaccine handling emergency plan during on-site visits.**

# Handle Vaccines With Care

**REFRIGERATE** vaccines immediately upon arrival.* Store varicella vaccine in the freezer. Do not freeze diluent. Store diluent at room temperature or in the refrigerator. Do not store vaccines in the refrigerator door, where temperatures fluctuate. Do not store food or drinks in the same refrigerator as vaccines.

**PROTECT MMR** from light at all times and keep vaccine cold.* Do not remove vaccine from the refrigerator until it is time to reconstitute and administer.

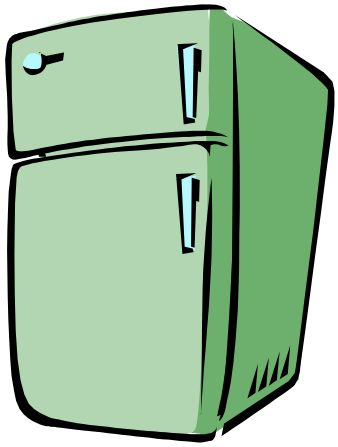
**STORE AND ROTATE** vaccine stock with the earliest expiration date in front of those with longer expiration dates. Always use short-dated vaccine first. Do not use expired vaccine. Do not over-order.

**SAFEGUARD** the refrigerator. Make sure that the doors are shut tightly and that the unit stays plugged in. (Locking-type plug devices are available.)

**POST "DO NOT UNPLUG"** warning signs next to the wall socket and power plug so electricians or janitors do not accidentally unplug the refrigerator or freezer or turn off the circuit or electricity.

**THERMOMETERS** should be kept in both the refrigerator and freezer.

**MAINTAIN** proper temperatures in the refrigerator (35° F to 46° F or 2° to 8° C) and freezer (5° F or -15° C or colder).* If space allows, keep temperatures stable by placing large plastic containers of water in the refrigerator or ice packs in the freezer.



**CHECK AND RECORD** refrigerator and freezer temperatures twice a day—first thing in the morning and last thing at the end of the day—to confirm temperatures have stayed within recommended ranges.* If temperatures reach outside of recommended ranges (too warm or too cold), first refrigerate vaccines appropriately, then contact vaccine manufacturers to verify vaccine viability. For assistance, contact the Utah VFC Program.

Utah VFC

Utah Vaccines for Children

288 North 1460 West
P.O. Box 142001
Salt Lake City,UT 84114-2001
Phone: (801) 538-9450
Fax: (801) 538-9440
www.immunize-utah.org

***Refer to package insert for specific instructions on each vaccine. If you have questions about the condition of the vaccines at the time of delivery, first store them appropriately, then notify the manufacturer or call the Utah VFC Program, at (801) 538-9450, for assistance.**

Utah Department of Health
IMMUNIZATION PROGRAM
Immunize for healthy lives

P.O. Box 142001
288 North 1460 West
Salt Lake City, T 84114-2001
Return Service Requested

Check out our web-site's new look!

**www.immunize-utah.org**

# Did You Forget Something?

**If** you have received a VFC Vaccine Storage & Handling training packet and have not submitted the Certification and Checklist, we are waiting to hear from you. Please take the time to complete the training, fill out the *Vaccine Storage & handling Certification* and *Checklist for Safe Vaccine Handling and Storage* and fax them to (801) 538-9440.

The storage & handling packet is a valuable training tool for your office. The newly-produced video, included in the packet, is only 20 minutes and has many helpful tips for protecting your vaccine. Use it as a training guide for new employees or as a refresher course during staff meetings. All employees should know how to properly store and handle vaccines.

Vaccines are very costly (as you know) and can easily be damaged. It is very important to protect your vaccines in order to protect your patients and your pocketbook.

If you have not yet received a VFC Vaccine Storage & Handling training packet, please call (801) 538-9450 or email your request to lindajenkins@utah.gov. Please include your name, clinic name, address, and VFC PIN number.